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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/916,472	07/30/2001	Hiroaki Hoshi	35.C15638	8751

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EXAMINER

LUU, THANH X

ART UNIT	PAPER NUMBER
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2878

DATE MAILED: 03/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/916,472	Applicant(s) HOSHI ET AL.	
	Examiner Thanh X Luu	Art Unit 2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2004.
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 11 and 12 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1, 3-6, 11 and 12 is/are rejected.
 7) ☒ Claim(s) 2, 7 and 8 is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is in response to amendments and remarks filed January 26, 2004. Claims 1-8, 11 and 12 are currently pending.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3-5, 11 and 12, as understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Miyagawa et al. (U.S. Patent 5,555,087).

Regarding claims 1, 3-5, 11 and 12, Miyagawa et al. disclose (see Figure 1) an image pickup apparatus, comprising: an image pickup unit having an array of a plurality of photodetection elements (30); a light-emitting element unit (20, 21, 22, 37, 32) for emitting reference light (S2) having a predetermined frequency difference with respect to a frequency of light incident (a5/a6) on the image pickup unit; and a wave synthesizer (42) for synthesizing the incident light and the reference light from the light-emitting unit and guiding the synthesized light to the image pickup unit. Miyagawa et al. further disclose (see Figure 1) a filter (34) adapted to extract a difference frequency band from outputs from the photodetection elements and controlling the frequency (with 32) of the reference light (s1) by using an output from the filter. Miyagawa et al. also disclose (see Figure 1) an optical system (44) for focusing light on the image pickup unit and a signal processing circuit (31) for processing an output signal from the image pickup unit.

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Since the frequency difference depends of the optical path lengths, Miyagawa et al. disclose the frequency difference is modulated according to a predetermined rule. Further since light from the light emitting unit reaches the photodetection elements, the light emitting element unit is provided in common as claimed. Miyagawa et al. further disclose (see column 6, line 64) the frequency difference is constant. Further since the image pickup unit can be split into any desired units, each unit having a plurality of photodetection elements, the apparatus of Miyagawa et al. has more than two of the pickup units.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miyagawa et al. in view of Horiuchi et al. (U.S. Patent 5,463,461).

Regarding claim 6, Miyagawa et al. disclose the claimed invention as set forth above. Miyagawa et al. do not specifically disclose a semiconductor laser. Horiuchi et al. teach (see column 1, line 16-17) the light-emitting unit including a semiconductor laser. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a semiconductor laser in the apparatus of Miyagawa et al. in view of Horiuchi et al. to obtain a more compact and efficient light emitting device.

Allowable Subject Matter

5. Claims 2, 6 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Applicant's arguments filed January 26, 2004 have been fully considered but they are not persuasive.

Applicant asserts that the prior art does not disclose the light emitting unit changing the predetermined frequency in accordance with the difference frequency extracted by the filter. Examiner disagrees. Since a difference frequency is output and element 23 of Miyagawa et al. changes the frequency of the input light it is "in accordance" with the difference frequency.

Applicant also asserts that the filter of Miyagawa et al. does not extract a difference frequency. Examiner disagrees. Examiner invites Applicant to read over column 11, lines 25-29 of Miyagawa et al., which states "the aforesaid difference frequency... is allowed to pass through the band-pass filter..." Therefore, a difference frequency is extracted.

Thus, as set forth above, this rejection is proper.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh X Luu whose telephone number is (571) 272-2441. The examiner can normally be reached on M-F (6:30-4:00) First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Thanh X Luu
Primary Examiner
Art Unit 2878